Table of Contents: Volume 27

Number 1

Guest Editorial: Special Issue for Applications of Intelligent Real-Time Systems for Nuclear Engineering. . . . . *Da Ruan* 5

Uncertainty Analysis of Memory Based Sensor Validation Techniques . . . . . *Andrei V. Gribok, Aleksey M. Urmanov and J. Wesley Hines* 7

Redundant Sensor Calibration Monitoring Using Independent Component Analysis and Principal Component Analysis . . . . . *Jun Ding, Andrei V. Gribok, J. Wesley Hines and Brandon Rasmussen* 27

Classification of Steam Generator Tube Defects for Real-Time Applications Using Eddy Current Test Data and Self-Organizing Maps . . . . . *Roberto N. de Mesquita, Daniel K. S. Ting, Eduardo L. L. Cabral and Belle R. Upadhyaya* 49

A Real-Time Artificially Intelligent Monitoring System for Nuclear Power Plants Operators Support . . . . . *Roberto Schirru and Cláudio M. N. A. Pereira* 71

Enhancing Cross-Correlation Analysis with Artificial Neural Networks for Nuclear Power Plant Feedwater Flow Measurement . . . . . *Davide Roverso and Da Ruan* 85

Diagnostics and Surveillance Methods in Nuclear Systems for Real-Time Applications . . . . . *I. Pázsit* 97

Number 2

Resource Reservation in Dynamic Real-Time Systems. . . . . *Luca Abeni and Giorgio Buttazzo* 123

A Model for Updating Real-Time Applications . . . . . *Jami Montgomery* 167

Using Program Transformations to Provide Safety Properties for Real-Time Systems . . . . . *Grace Tsai and Shuhua Wang* 189

Number 3

A Task Model to Reduce Control Delays . . . . . *Patricia Balbastre, Ismael Ripoll, Josep Vidal and Alfons Crespo* 215

Scheduling Value-Based Nested Transactions in Distributed Real-Time Database Systems . . . . . *Hong-Ren Chen and Y. H. Chin* 237

Hard Real-Time Communication with the Timed Token Protocol: Current State and Challenging Problems . . . . . *Sijing Zhang, Alan Burns, Jing Chen and E. Stewart Lee* 271